RAPID RIVER HOMEOWNERS WATER AND SEWER DISTRICT (PWS 2250050)
SOURCE WATER ASSESSMENT FINAL REPORT

April 8, 2003

State of Idaho
Department of Environmental Quality

Executive Summary

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. This assessment is based on a land use inventory of the designated source water assessment area and sensitivity factors associated with the well and aquifer characteristics.

This report, *Source Water Assessment for Rapid River Homeowners Water and Sewer District, Riggins, Idaho*, describes the public drinking water system, the boundaries of the zones of water contribution, and the associated potential contaminant sources located within these boundaries. This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. **The results should not be used as an absolute measure of risk and they should not be used to undermine public confidence in the water system.**

The Rapid River Homeowners Water and Sewer District drinking water system consists of two ground water wells: Well #1 and Well #2. Well #2 is the newer well of the system and is also the primary well of the system. It is located approximately one mile west of the Little Salmon River and Highway 95 near Rapid River. Well #1 is the older well of the system and acts as a backup. It is located approximately 1,000 feet northeast of Well #2. Well #2 supplies approximately 50 gallons per minute (gpm) of water to the system per day. When Well #1 is in use, it supplies approximately 60 to 80 gpm of water to the system. The drinking water from the wells is treated using a hypochlorination system and is stored in a 35,000-gallon standpipe steel reservoir. The Rapid River Homeowners Water and Sewer District drinking water system currently serves 91 people through 42 connections.

Final susceptibility scores are derived from equally weighing system construction scores, hydrologic sensitivity scores, and potential contaminant/land use scores. Therefore, a low rating in one or two categories coupled with a higher rating in other categories results in a final rating of low, moderate, or high susceptibility. With the potential contaminants associated with most urban and heavily agricultural areas, the best score a well can get is moderate. Potential Contaminants/Land Uses are divided into four categories, inorganic chemical (IOC, e.g. nitrates, arsenic) contaminants, volatile organic chemical (VOC, e.g. petroleum products) contaminants, synthetic organic chemical (SOC, e.g. pesticides) contaminants, and microbial contaminants (e.g. bacteria). As different wells can be subject to various contamination settings, separate scores are given for each type of contaminant.

In terms of total susceptibility, Well #1 rates automatically high and Well #2 rates moderate for all potential contaminant categories. According to the 2001 sanitary survey, a drainage creek off of Rapid River runs within 30 feet of Well #1. A radius of 50 feet around the wellhead is known as the 1A zone or sanitary setback. Drinking water sources that have contaminants in this zone are considered highly vulnerable to contamination. If the drainage creek were diverted or relocated to a distance greater than 50 feet from Well #1, the overall susceptibility scores would be reduced from high to moderate for the well.

No VOCs or SOCs have ever been detected in the wells. Trace concentrations of the IOCs fluoride, selenium, nitrite, and nitrate have been detected in tested water, but at concentrations significantly below maximum contamination levels (MCLs) as set by the EPA. Sodium, an unregulated chemical, was also detected in the well water at low levels. Alpha and beta particles (radionuclides) have been detected in the distribution system and both wells at levels below the MCLs. Total coliform bacteria were detected once in Well #1 in July 1995 and repeatedly in the distribution system in July 1998. However, no bacteria have been detected since that time.

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses that require surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources. If the system should need to expand in the future, new well sites should be located in areas with as few potential sources of contamination as possible, and the site should be reserved and protected for this specific use.

For the Rapid River Homeowners Water and Sewer District, drinking water protection activities should first focus on correcting any deficiencies outlined in the sanitary survey (an inspection conducted every five years with the purpose of determining the physical condition of a water system's components and its capacity). Actions should be taken to keep a 50-foot radius perimeter clear of all potential contaminants from around the wellhead. The Rapid River Homeowners Water and Sewer District may want to consider diverting the drainage creek to a distance of at least 50 feet from Well #1 to avoid contamination associated with this potential contaminant source. Any contaminant spills within the delineation should be carefully monitored and dealt with. As much of the designated protection areas are outside the direct jurisdiction of the Rapid River Homeowners Water and Sewer District drinking water system, collaboration and partnerships with state and local agencies, and industry groups should be established and are critical to the success of drinking water protection. In addition, the wells should maintain sanitary standards regarding wellhead protection.

Due to the time involved with the movement of ground water, drinking water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. A strong public education program should be a primary focus on any drinking water protection plan as the delineation contains some urban and residential land uses. Public education topics could include proper lawn care practices, household hazardous waste disposal methods, and the importance of water conservation to name but a few. There are multiple resources available to help communities implement protection programs, including the Drinking Water Academy of the EPA. As there are transportation corridors through the delineation, the Idaho Department of Transportation should be involved in protection activities. Drinking water protection activities for agriculture should be coordinated with the Idaho State Department of Agriculture, the Soil Conservation Commission, the Idaho County Soil and Water Conservation District, and the Natural Resource Conservation Service.

A community must incorporate a variety of strategies in order to develop a comprehensive drinking water protection plan, be they regulatory in nature (e.g. zoning, permitting) or non-regulatory in nature (e.g. good housekeeping, public education, specific bet management practices). For assistance in developing protection strategies please contact the Lewiston Regional Office of the Idaho Department of Environmental Quality or the Idaho Rural Water Association.

SOURCE WATER ASSESSMENT FOR RAPID RIVER HOMEOWNERS WATER AND SEWER DISTRICT, RIGGINS, IDAHO

Section 1. Introduction - Basis for Assessment

The following sections contain information necessary to understand how and why this assessment was conducted. **It is important to review this information to understand what the rankings of this assessment mean.** Maps showing the delineated source water assessment area and the inventory of significant potential sources of contamination identified within that area are attached. The list of significant potential contaminant source categories and their rankings used to develop the assessment is also included.

Background

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the EPA to assess every source of public drinking water for its relative susceptibility to contaminants regulated by the Safe Drinking Water Act. This assessment is based on a land use inventory of the delineated assessment area and sensitivity factors associated with the wells and aquifer characteristics.

Level of Accuracy and Purpose of the Assessment

Since there are over 2,900 public water sources in Idaho, there is limited time and resources to accomplish the assessments. All assessments must be completed by May of 2003. An in-depth, site-specific investigation of each significant potential source of contamination is not possible. **Therefore, this assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. The results should <u>not be</u> used as an absolute measure of risk and they should <u>not be</u> used to undermine public confidence in the water system.**

The ultimate goal of the assessment is to provide data to local communities to develop a protection strategy for their drinking water supply system. The Idaho Department of Environmental Quality (DEQ) recognizes that pollution prevention activities generally require less time and money to implement than treatment of a public water supply system once it has been contaminated. DEQ encourages communities to balance resource protection with economic growth and development. The local community, based on its own needs and limitations, should determine the decision as to the amount and types of information necessary to develop a drinking water protection program. Wellhead or drinking water protection is one facet of a comprehensive growth plan, and it can complement ongoing local planning efforts.

Section 2. Conducting the Assessment

General Description of the Source Water Quality

The Rapid River Homeowners Water and Sewer District drinking water system consists of two ground water wells: Well #1 and Well #2. Well #2 is the newer well of the system and is also the primary well of the system. It is located approximately one mile west of the Little Salmon River and Highway 95 near Rapid River. Well #1 is the older well of the system and acts as a backup. It is located approximately 1,000 feet northeast of Well #2. Well #2 supplies approximately 50 gpm of water to the system per day. When Well #1 is in use, it supplies approximately 60 to 80 gpm of water to the system. The drinking water from the wells is treated using a hypochlorination system and is stored in a 35,000-gallon standpipe steel reservoir. The Rapid River Homeowners Water and Sewer District drinking water system currently serves 91 people through 42 connections (Figure 1).

No VOCs or SOCs have ever been detected in the wells. Trace concentrations of the IOCs fluoride, selenium, nitrite, and nitrate have been detected in tested water, but at concentrations significantly below MCLs as set by the EPA. Sodium, an unregulated chemical, was also detected in the well water at low levels. Alpha and beta particles (radionuclides) have been detected in the distribution system and both wells at levels below the MCLs. Total coliform bacteria were detected once in Well #1 in July 1995 and repeatedly in the distribution system in July 1998. However, no bacteria have been detected since that time.

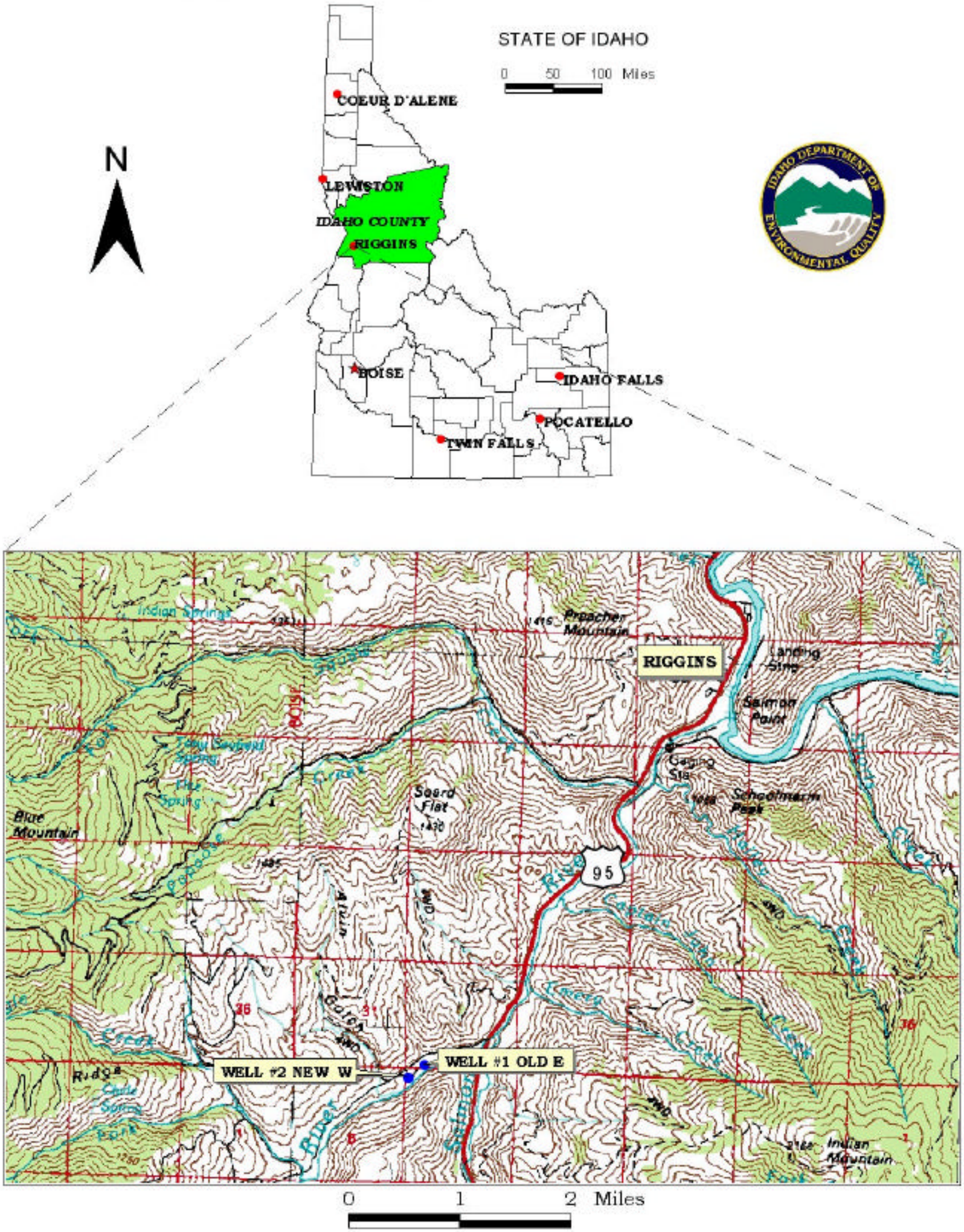
Defining the Zones of Contribution – Delineation

The delineation process establishes the physical area around a well that will become the focal point of the assessment. The process includes mapping the boundaries of the zone of contribution into time-of-travel (TOT) zones (zones indicating the number of years necessary for a particle of water to reach a well) for water in the aquifer. DEQ performed the delineations using a refined computer model approved by the EPA in determining the 3-year (Zone 1B), 6-year (Zone 2), and 10-year (Zone 3) TOT for water in the vicinity of the Rapid River Homeowners Water and Sewer District wells. The computer model used site specific data, assimilated from a variety of sources including local area well logs, and hydrogeologic information.

The boundary conditions for the modeling effort included the White Bird Ridge to the south and two normal faults to the northwest and southwest. Hydraulic conductivity, as calculated by specific capacity tests at local wells, ranged from 5 feet/day to 90 feet/day, with an average value of 70 feet/day. Aquifer thicknesses ranged from 10 to 30 feet, with an average of 20 feet. The modeling simulations showed that the pathlines came in contact with the bounding faults in the 6-year TOT. Since the watershed up-gradient of the normal faults was quite extensive, professional judgement was employed to determine how much of the watershed needed to be included to make up the 10-year TOT delineation portion.

Since the wells are within 1,000 feet of each other, they share the same delineation. The delineated area for the Rapid River Homeowners Water and Sewer District wells can best be described as a large area that follows the Rapid River drainage trending southwest and then spans out to include northern gulches and drainage's that flow into the Rapid River. It is approximately 2 miles long as it heads southwest and approximately 2.5 miles wide as it turns north (Figure 2). The actual data used by the DEQ in determining the source water assessment delineation area is available upon request.

FIGURE 1. Geographic Location of Rapid River Homeowners Water & Sewer District



Identifying Potential Sources of Contamination

A potential source of contamination is defined as any facility or activity that stores, uses, or produces, as a product or by-product, the contaminants regulated under the Safe Drinking Water Act and has a sufficient likelihood of releasing such contaminants at levels that could pose a concern relative to drinking water sources. The goal of the inventory process is to locate and describe those facilities, land uses, and environmental conditions that are potential sources of ground water contamination. The locations of potential sources of contamination within the delineation areas were obtained by field surveys conducted by DEQ and from available databases.

Land use within the immediate area and the surrounding area of the Rapid River Homeowners Water and Sewer District wells is predominantly woodland or undeveloped land.

It is important to understand that a release may never occur from a potential source of contamination provided they are using best management practices. Many potential sources of contamination are regulated at the federal level, state level, or both to reduce the risk of release. Therefore, when a business, facility, or property is identified as a potential contaminant source, this should not be interpreted to mean that this business, facility, or property is in violation of any local, state, or federal environmental law or regulation. What it does mean is that the potential for contamination exists due to the nature of the business, industry, or operation. There are a number of methods that water systems can use to work cooperatively with potential sources of contamination, including educational visits and inspections of stored materials. Many owners of such facilities may not even be aware that they are located near a public water supply well.

Contaminant Source Inventory Process

A two-phased contaminant inventory of the study area was conducted in January and February 2003. The first phase involved identifying and documenting potential contaminant sources within the Rapid River Homeowners Water and Sewer District source water assessment area (Figure 2) through the use of field surveys, computer databases and Geographic Information System (GIS) maps developed by DEQ. The second, or enhanced, phase of the contaminant inventory involved contacting the operator to identify and add any additional potential sources in the area.

The delineated source water assessment area of both wells of the Rapid River Homeowners Water and Sewer District contains Rapid River, Alvin Gulch Creek, Shingle Creek, Rapid River Road, two national pollution discharge elimination systems (NPDESs), and a site regulated under the Superfund Amendments and Reauthorization Act (SARA). Additionally, the 2001 sanitary survey indicates that a drainage creek off of Rapid River runs within 30 feet of Well #1. A radius of 50 feet around the wellhead is known as the 1A zone or sanitary setback. Drinking water sources that have contaminants in this zone are considered highly vulnerable to contamination. All of these potential contaminant sources could contribute leachable pollutants to the aquifer in the event of an accidental spill, release, or flood. Table 1 and Table 2 below list the potential contaminants for each well.

Table 1. Rapid River Homeowners Water and Sewer District, Well #1, Potential Contaminant Inventory and Land Use

Site	Description of Source[1]	TOT[2] Zone	Source of Information	Potential Contaminants[3]
1	NPDES	6-10 YR	Database Search	IOC, SOC, Microbials
2	NPDES	6-10 YR	Database Search	IOC, SOC, Microbials
3	SARA Site	6-10 YR	Database Search	IOC, SOC, Microbials
	Rapid River	0-10 YR	GIS Map	IOC, VOC, SOC, Microbials
	Rapid River Road	0-10 YR	GIS Map	IOC, VOC, SOC, Microbials
	Alvin Gulch Creek	0-10 YR	GIS Map	IOC, VOC, SOC, Microbials
	Shingle Creek	6-10 YR	GIS Map	IOC, VOC, SOC
	Drainage from Rapid River	0-10 YR (1A)	2001 Sanitary Survey, GIS Map	IOC, VOC, SOC, Microbials

[1] NPDES = national pollution discharge elimination system, SARA = Superfund Amendments and Reauthorization Act

[2] TOT = time-of-travel (in years) for a potential contaminant to reach the wellhead, 1A = sanitary setback area

[3] IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

Table 2. Rapid River Homeowners Water and Sewer District, Well #2, Potential Contaminant Inventory and Land Use

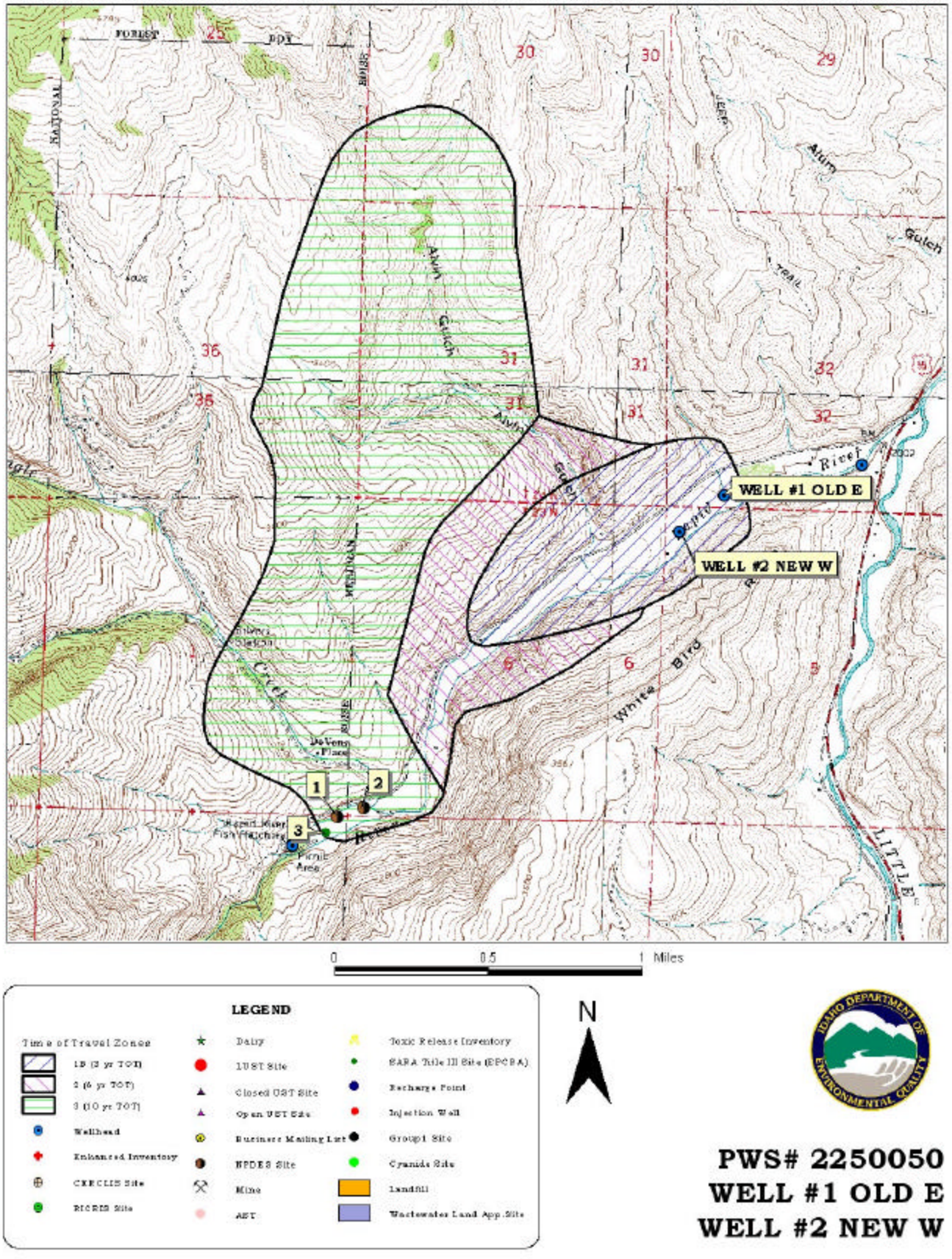
Site	Description of Source[1]	TOT[2] Zone	Source of Information	Potential Contaminants[3]
1	NPDES	6-10 YR	Database Search	IOC, SOC, Microbials
2	NPDES	6-10 YR	Database Search	IOC, SOC, Microbials
3	SARA Site	6-10 YR	Database Search	IOC, SOC, Microbials
	Rapid River	0-10 YR	GIS Map	IOC, VOC, SOC, Microbials
	Rapid River Road	0-10 YR	GIS Map	IOC, VOC, SOC, Microbials
	Alvin Gulch Creek	0-10 YR	GIS Map	IOC, VOC, SOC, Microbials
	Shingle Creek	6-10 YR	GIS Map	IOC, VOC, SOC

[1] NPDES = national pollution discharge elimination system, SARA = Superfund Amendments and Reauthorization Act

[2] TOT = time-of-travel (in years) for a potential contaminant to reach the wellhead, 1A = sanitary setback area

[3] IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

FIGURE 2. Rapid River Homeowners Water & Sewer District Delineation Map and Potential Contaminant Source Locations



Section 3. Susceptibility Analyses

Each well's susceptibility to contamination was ranked as high, moderate, or low risk according to the following considerations: hydrologic characteristics, physical integrity of the well, land use characteristics, and potentially significant contaminant sources. The susceptibility rankings are specific to a particular potential contaminant or category of contaminants. Therefore, a high susceptibility rating relative to one potential contaminant does not mean that the water system is at the same risk for all other potential contaminants. The relative ranking that is derived for each well is a qualitative, screening-level step that, in many cases, uses generalized assumptions and best professional judgement. Appendix A contains the susceptibility analysis worksheets for the system. The following summaries describe the rationale for the susceptibility ranking.

Hydrologic Sensitivity

The hydrologic sensitivity of a well is dependent upon four factors: the surface soil composition, the material in the vadose zone (between the land surface and the water table), the depth to first ground water, and the presence of a 50-foot thick fine-grained zone (aquitard) above the producing zone of the well. Slowly draining soils such as silt and clay typically are more protective of ground water than coarse-grained soils such as sand and gravel. Similarly, fine-grained sediments in the subsurface and a water depth of more than 300 feet protect the ground water from contamination.

Hydrologic sensitivity rated moderate for both wells of the Rapid River Homeowners Water and Sewer District. Area soils are poorly to moderately drained, reducing the scores. The well log for Well #1 did not give enough information to determine the composition of the vadose zone, depth to first ground water, or if there were any fine-grained zones above the producing zone of the well. The well log for Well #2 indicates that the vadose zone is composed mostly of gravel and first ground water is found at 34 feet below ground surface (bgs).

Well Construction

Well construction directly affects the ability of the well to protect the aquifer from contaminants. System construction scores are reduced when information shows that potential contaminants will have a more difficult time reaching the intake of the well. Lower scores imply a system is less vulnerable to contamination. For example, if the well casing and annular seal both extend into a low permeability unit, then the possibility of contamination is reduced and the system construction score goes down. If the highest production interval is more than 100 feet below the water table, then the system is considered to have better buffering capacity. If the wellhead and surface seal are maintained to standards, as outlined in sanitary surveys, then contamination down the well bore is less likely. If the well is protected from surface flooding and is outside the 100-year floodplain, then contamination from surface events is reduced. A sanitary survey was conducted in 2001 for the system.

Well #1 of the Rapid River Homeowners Water and Sewer District was drilled in 1972 to a shallow depth of 27 feet bgs. It has an eight-inch casing set to 27 feet bgs. Well #2 was drilled in 1991 to a depth of 60 feet bgs. It has a 0.250-inch thick, six-inch diameter casing set to 48 feet bgs into river gravel. The casing is sealed to 20 feet in cemented boulders and gravel. The highest producing zone if found between 36 feet and 60 feet bgs and the static water level is found at 34 feet bgs.

Both wells of the Rapid River Homeowners Water and Sewer District have a moderately susceptible system. According to the 2001 sanitary survey, the wellhead and surface seals for both wells are maintained to standards and the wells are properly vented. Both wells are properly protected from surface flooding and the wells are located outside of the 100-year flood plain. However, there was not enough information from the well log of Well #1 to determine if the annular seal and casing extend to low permeability units and the well log for Well #2 indicates that the annular seal and casing for that well do not extend to low permeability units. Both wells are very shallow in total depth and therefore the highest producing zones cannot be 100 feet or greater below the static water level.

Though the wells may have been in compliance with standards when it was completed, current PWS well construction standards are more stringent. The Idaho Department of Water Resources *Well Construction Standards Rules* (1993) require all PWSs to follow DEQ standards as well. IDAPA 58.01.08.550 requires that PWSs follow the *Recommended Standards for Water Works* (1997) during construction. These standards include provisions for well screens, pumping tests, and casing thicknesses to name a few. Table 1 of the *Recommended Standards for Water Works* (1997) lists the required steel casing thickness for various diameter wells. A six-inch diameter well requires a casing thickness of 0.280-inches. In this case, there was insufficient information available to determine if Well #1 meets all the criteria outlined in the IDWR Well Construction Standards and Well #2 does not meet all of the criteria.

Potential Contaminant Source and Land Use

Both of the Rapid River Homeowners Water and Sewer District wells rated moderate for IOCs (e.g. nitrates, arsenic), VOCs (e.g. petroleum products, chlorinated solvents) and SOCs (e.g. pesticides), and low for microbial contaminants (e.g. bacteria). The woodland or undeveloped land use of the delineation contributed to the land use scores of the wells. The limited number of potential contaminants surrounding both wells reduced the overall potential contaminant land use scores.

Final Susceptibility Ranking

An IOC detection above a drinking water standard MCL, any detection of a VOC or SOC, or a detection of total coliform bacteria or fecal coliform bacteria at the wellhead will automatically give a high susceptibility rating to a well despite the land use of the area because a pathway for contamination already exists. Additionally, if there are contaminant sources located within 50 feet of the source then the wellhead will automatically get a high susceptibility rating. According to the 2001 sanitary survey, a drainage creek off of Rapid River runs within 50 feet of Well #1, resulting in a high overall susceptibility to all potential contaminants for this well. Hydrologic sensitivity and system construction scores are heavily weighted in the final scores. Having multiple potential contaminant sources in the 0 to 3-year time of travel zone (Zone 1B) and agricultural land contribute greatly to the overall ranking. Well #1 rates high and Well #2 rates moderate to all potential contaminant categories.

Table 3. Summary of Rapid River Homeowners Water and Sewer District Susceptibility Evaluation

Well	Susceptibility Scores[1]									
	Hydrologic Sensitivity	Contaminant Inventory				System Construction	Final Susceptibility Ranking			
		IOC	VOC	SOC	Microbials		IOC	VOC	SOC	Microbials
Well #1	M	M	M	M	L	M	H*	H*	H*	H*
Well #2	M	M	M	M	L	M	M	M	M	M

[1]H = High Susceptibility, M = Moderate Susceptibility, L = Low Susceptibility,
IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical
H* = Automatic high susceptibility due to a drainage creek that runs within 50 feet of the wellhead

Susceptibility Summary

Overall, Well #1 rates automatically high and Well #2 rates moderate for all potential contaminant categories. According to the 2001 sanitary survey, a drainage creek off of Rapid River runs within 30 feet of Well #1. A radius of 50 feet around the wellhead is known as the 1A zone or sanitary setback. Drinking water sources that have contaminants in this zone are considered highly vulnerable to contamination. If the drainage creek were diverted or relocated to a distance greater than 50 feet from Well #1, the overall susceptibility scores would be reduced from high to moderate for the well.

No VOCs or SOCs have ever been detected in the wells. Trace concentrations of the IOCs fluoride, selenium, nitrite, and nitrate have been detected in tested water, but at concentrations significantly below MCLs as set by the EPA. Sodium, an unregulated chemical, was also detected in the well water at low levels. Alpha and beta particles (radionuclides) have been detected in the distribution system and both wells at levels below the MCLs. Total coliform bacteria were detected once in Well #1 in July 1995 and repeatedly in the distribution system in July 1998. However, no bacteria have been detected since that time.

Section 4. Options for Drinking Water Protection

The susceptibility assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what the susceptibility ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses that require surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

For the Rapid River Homeowners Water and Sewer District, drinking water protection activities should first focus on correcting any deficiencies outlined in the sanitary survey. Actions should be taken to keep a 50-foot radius perimeter clear of all potential contaminants from around the wellhead. The Rapid River Homeowners Water and Sewer District may want to consider diverting the drainage creek to a distance of at least 50 feet from Well #1 to avoid contamination associated with this potential contaminant source. Any contaminant spills within the delineation should be carefully monitored and dealt with. As much of the designated protection areas are outside the direct jurisdiction of the Rapid River Homeowners Water and Sewer District drinking water system, collaboration and partnerships with state and local agencies, and industry groups should be established and are critical to the success of drinking water protection. In addition, the wells should maintain sanitary standards regarding wellhead protection.

Due to the time involved with the movement of ground water, drinking water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. As there are many houses within the delineation, a strong public education program should be a primary focus of any drinking water protection plan. Public education topics could include proper lawn and garden care practices, hazardous waste disposal methods, proper care and maintenance of septic systems, and the importance of water conservation to name but a few. There are multiple resources available to help communities implement protection programs, including the Drinking Water Academy of the EPA.

A system must incorporate a variety of strategies in order to develop a comprehensive drinking water protection plan, be they regulatory in nature (e.g. zoning, permitting) or non-regulatory in nature (e.g. good housekeeping, public education, specific best management practices). For assistance in developing protection strategies please contact the Lewiston Regional Office of the DEQ or the Idaho Rural Water Association.

Assistance

Public water supplies and others may call the following DEQ offices with questions about this assessment and to request assistance with developing and implementing a local protection plan. In addition, draft protection plans may be submitted to the DEQ office for preliminary review and comments.

Lewiston Regional DEQ Office (208) 799-4370

State DEQ Office (208) 373-0502

Website: http://www.deq.state.id.us

Water suppliers serving fewer than 10,000 persons may contact Melinda Harper, mlharper@idahoruralwater.com, Idaho Rural Water Association, at 208-343-7001 for assistance with drinking water protection (formerly wellhead protection) strategies.

POTENTIAL CONTAMINANT INVENTORY
LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as Superfund is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5 mg/L.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.

References Cited

Great Lakes-Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, 1997. "Recommended Standards for Water Works."

Idaho Department of Environmental Quality, 1997. Design Standards for Public Drinking Water Systems. IDAPA 58.01.08.550.01.

Idaho Department of Water Resources, 1993. Administrative Rules of the Idaho Water Resource Board: Well Construction Standards Rules. IDAPA 37.03.09.

Idaho Department of Environmental Quality, 2001. Sanitary survey for Rapid River Homeowners Water and Sewer District.

Idaho Department of Environmental Quality, 1993. GWUDI field survey for Rapid River Homeowners Water and Sewer District.

Appendix A

Rapid River Homeowners Water and Sewer District Susceptibility Analysis Worksheets

The final scores for the susceptibility analysis were determined using the following formulas:

1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.2)

2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.375)

Final Susceptibility Scoring:

0 - 5 Low Susceptibility

6 - 12 Moderate Susceptibility

≥ 13 High Susceptibility

Ground Water Susceptibility Report Public Water System Name : RAPID RIVER HOMEOWNERS WATER SEWER DIST Well# : WELL #1 OLD E

Public Water System Number 2250050 3/13/03 1:58:10 PM

1. System Construction		SCORE				
Drill Date	7/11/72					
Driller Log Available	YES					
Sanitary Survey (if yes, indicate date of last survey)	YES	2001				
Well meets IDWR construction standards	NO	1				
Wellhead and surface seal maintained	YES	0				
Casing and annular seal extend to low permeability unit	NO	2				
Highest production 100 feet below static water level	NO	1				
Well located outside the 100 year flood plain	YES	0				
Total System Construction Score		4				
2. Hydrologic Sensitivity						
Soils are poorly to moderately drained	YES	0				
Vadose zone composed of gravel, fractured rock or unknown	YES	1				
Depth to first water > 300 feet	NO	1				
Aquitard present with > 50 feet cumulative thickness	NO	2				
Total Hydrologic Score		4				
3. Potential Contaminant / Land Use - ZONE 1A		IOC Score	VOC Score	SOC Score	Microbial Score	
Land Use Zone 1A	RANGELAND, WOODLAND, BASALT	0	0	0	0	
Farm chemical use high	NO	0	0	0		
IOC, VOC, SOC, or Microbial sources in Zone 1A	YES	YES	YES	YES	YES	
Total Potential Contaminant Source/Land Use Score - Zone 1A		0	0	0	0	
Potential Contaminant / Land Use - ZONE 1B						
Contaminant sources present (Number of Sources)	YES	3	3	3	3	
(Score = # Sources X 2) 8 Points Maximum		6	6	6	6	
Sources of Class II or III leacheable contaminants or	YES	3	3	3		
4 Points Maximum		3	3	3		
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0	
Land use Zone 1B	Less Than 25% Agricultural Land	0	0	0	0	
Total Potential Contaminant Source / Land Use Score - Zone 1B		9	9	9	6	
Potential Contaminant / Land Use - ZONE II						
Contaminant Sources Present	YES	2	2	2		
Sources of Class II or III leacheable contaminants or	YES	1	1	1		
Land Use Zone II	Less than 25% Agricultural Land	0	0	0		
Potential Contaminant Source / Land Use Score - Zone II		3	3	3	0	
Potential Contaminant / Land Use - ZONE III						
Contaminant Source Present	YES	1	1	1		
Sources of Class II or III leacheable contaminants or	YES	1	1	1		
Is there irrigated agricultural lands that occupy > 50% of	NO	0	0	0		
Total Potential Contaminant Source / Land Use Score - Zone III		2	2	2	0	
Cumulative Potential Contaminant / Land Use Score		14	14	14	6	
4. Final Susceptibility Source Score		11	11	11	10	
5. Final Well Ranking		High	High	High	High	

Ground Water Susceptibility Report Public Water System Name : RAPID RIVER HOMEOWNERS WATER SEWER DIST Well# : WELL #2 NEW W

Public Water System Number 2250050 3/13/03 1:58:22 PM

1. System Construction		SCORE				
Drill Date	3/27/91					
Driller Log Available	YES					
Sanitary Survey (if yes, indicate date of last survey)	YES	2001				
Well meets IDWR construction standards	NO	1				
Wellhead and surface seal maintained	YES	0				
Casing and annular seal extend to low permeability unit	NO	2				
Highest production 100 feet below static water level	NO	1				
Well located outside the 100 year flood plain	YES	0				
Total System Construction Score		4				
2. Hydrologic Sensitivity						
Soils are poorly to moderately drained	YES	0				
Vadose zone composed of gravel, fractured rock or unknown	YES	1				
Depth to first water > 300 feet	NO	1				
Aquitard present with > 50 feet cumulative thickness	NO	2				
Total Hydrologic Score		4				
3. Potential Contaminant / Land Use - ZONE 1A		IOC Score	VOC Score	SOC Score	Microbial Score	
Land Use Zone 1A	RANGELAND, WOODLAND, BASALT	0	0	0	0	
Farm chemical use high	NO	0	0	0		
IOC, VOC, SOC, or Microbial sources in Zone 1A	NO	NO	NO	NO	NO	
Total Potential Contaminant Source/Land Use Score - Zone 1A		0	0	0	0	
Potential Contaminant / Land Use - ZONE 1B						
Contaminant sources present (Number of Sources)	YES	3	3	3	3	
(Score = # Sources X 2) 8 Points Maximum		6	6	6	6	
Sources of Class II or III leacheable contaminants or	YES	3	3	3		
4 Points Maximum		3	3	3		
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0	
Land use Zone 1B	Less Than 25% Agricultural Land	0	0	0	0	
Total Potential Contaminant Source / Land Use Score - Zone 1B		9	9	9	6	
Potential Contaminant / Land Use - ZONE II						
Contaminant Sources Present	YES	2	2	2		
Sources of Class II or III leacheable contaminants or	YES	1	1	1		
Land Use Zone II	Less than 25% Agricultural Land	0	0	0		
Potential Contaminant Source / Land Use Score - Zone II		3	3	3	0	
Potential Contaminant / Land Use - ZONE III						
Contaminant Source Present	YES	1	1	1		
Sources of Class II or III leacheable contaminants or	YES	1	1	1		
Is there irrigated agricultural lands that occupy > 50% of	NO	0	0	0		
Total Potential Contaminant Source / Land Use Score - Zone III		2	2	2	0	
Cumulative Potential Contaminant / Land Use Score		14	14	14	6	
4. Final Susceptibility Source Score		11	11	11	10	
5. Final Well Ranking		Moderate	Moderate	Moderate	Moderate	